

We claim:

1. An optical cross-connect platform comprising:
  - a. power service modules;
  - b. shelf controller cards;
  - c. fans;
  - d. routing, synchronization and protection modules; and
  - e. port cards;

wherein a selected one of the power service modules is associated with a selected one of the shelf controller cards, fans, routing, synchronization and protection modules or port cards;

and wherein the power service modules, shelf controller cards, fans, routing, synchronization and protection modules and port cards are co-located to form functional groups;

and wherein each power service module and its associated shelf controller card, fan, routing, synchronization and protection module or port card share at least one identifier.

2. The optical cross-connect platform of claim 1 wherein the at least one identifier comprises an alpha identifier, a numeric identifier or a colour identifier.

3. The optical cross-connect platform of claim 1 wherein each of the power service modules, shelf controller cards, fans, routing, synchronization and protection modules and port cards within a functional group are provided with a label associated with the functional group.

4. The optical cross-connect platform of claim 1 wherein the power service modules are further divided into sub-groups, each subgroup associated with the functional groups of the shelf controller cards, fans, routing, synchronization and protection modules and port cards; and wherein each subgroup and its associated functional group are assigned a colour identifier.

5. The optical cross-connect platform of claim 1 further comprising a port side and a switch side, wherein elements (a) to (e) are contained on the port side and the switch side comprises:

- a. power service modules;
- b. fans; and
- c. switch cards;

wherein a selected one of the power service modules is associated with a selected one of the fans or switch cards;

and wherein the power service modules, fans and switch cards are co-located to form functional groups;

and wherein each power service module and its associated fan or switch card share at least one identifier.

6. In an optical cross-connect platform comprising power service modules, shelf controller cards, fans, routing, synchronization and protection modules and port cards, a method of providing error prevention and pathfinding comprising:

- a. connecting a selected one of the power service modules to a selected one of the shelf controller cards, fans, routing, synchronization and protection modules or port cards;
- b. grouping the power service modules, shelf controller cards, fans, routing, synchronization and protection modules and port cards into co-located functional groups;
- c. assigning each power service module and its associated shelf controller card, fan, routing, synchronization and protection module or port card at least one common identifier; and
- d. using the at least one common identifier, correlating a selected one of the shelf controller cards, fans, routing, synchronization and protection modules or port cards with its associated power service module.

7. The method of claim 6 wherein the at least one identifier comprises an alpha identifier, a numeric identifier or a colour identifier.
8. The method of claim 6 wherein each of the power service modules, shelf controller cards, fans, routing, synchronization and protection modules and port cards within a functional group are provided with a label associated with the functional group.
9. The method of claim 6 wherein the power service modules are further divided into sub-groups, each subgroup associated with the functional groups of the shelf controller cards, fans, routing, synchronization and protection modules and port cards; and wherein each subgroup and its associated functional group are assigned a colour identifier
10. In an optical cross-connect platform comprising power service modules, shelf controller cards, fans, routing, synchronization and protection modules and port cards, a method of providing error prevention and pathfinding comprising:
  - a. connecting a selected one of the power service modules to a selected one of the shelf controller cards, fans, routing, synchronization and protection modules or port cards;
  - b. grouping the power service modules, shelf controller cards, fans, routing, synchronization and protection modules and port cards into co-located functional groups;
  - c. assigning each power service module and its associated shelf controller card, fan, routing, synchronization and protection module or port card at least one common identifier; and
  - d. using the at least one common identifier, locating a selected one of the power service modules, shelf controller cards, fans, routing, synchronization and protection modules or port cards with its associated power supply module.
11. A method of error detection and pathfinding in an optical cross-connect platform, the cross-connect comprising power service modules, shelf controller cards, fans, routing,

synchronization and protection modules and port cards, wherein a selected one of the power service modules is associated with a selected one of the shelf controller cards, fans, routing, synchronization and protection modules or port cards, and wherein the power service modules, shelf controller cards, fans, routing, synchronization and protection modules and port cards are co-located to form functional groups; and wherein each power service module and its associated shelf controller card, fan, routing, synchronization and protection module or port card share at least one identifier, the method comprising:

locating a selected one of the shelf controller cards, fans, routing, synchronization and protection modules or port cards in less than 3 seconds.